

Amendments to the Drawings

The attached sheets of drawings includes changes to sheet 2, Fig. 2. Sheet 2 includes Figs. 2 and 3 and replaces the original sheet 2 including Figs. 2 and 3. Figure 2 has been changed by adding previously omitted numeral 24 along with broken away section labeled 24g, previously referenced in the specification.

Attachment: 2 Replacement Sheets
1 Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

In the specification, the paragraph 0026 has been amended to identify an item in Fig. 2 of the drawing, to update the status of the referenced application (now a patent) and to add a broken away portion on the surface of the head along with a corresponding reference character.

New replacement drawings have been submitted in response to the requirement set forth in the Office action. The drawings were objected to, the examiner stating that the lines, numbers and letters are not uniformly thick and well defined, the numbers and reference characters are not plain and legible and the figure legends of figures 2 and 3 are poor. It is believed that the present drawings overcome these objections. In addition, numeral 24 has been added to Fig. 2 along with a broken away portion showing a roughened surface 24g, called for in the claims as originally presented and formed by air blasting with particulate material as noted in the specification, e.g., in paragraph 026. An annotated drawing sheet shows the referenced changes.

Claims 1-4 and 6-10 remain in this application. Claims 11-16 have been withdrawn.

The drawings were objected to under 35 CFR 1.83(a). Claim 5 calling for the head portion and the post being non-linear, has been cancelled. The examiner also stated

that the post portion formed with a matching self-holding taper and the roughened surface of the head portion must be shown or canceled from the claims. A roughened portion on the head has been added to Fig. 1 with regard to the latter point. With regard to the self-holding taper, it is submitted that this is shown in Fig. 1 and described in paragraph 018 which also references US Patent No. 4,738,623. As noted in that paragraph, implant 10 has a bore¹² formed with a self-holding taper and abutment¹⁴ has a post portion ¹⁶ formed with a matching self-holding taper. Further, the last sentence in paragraph 023, describing a preferred embodiment of the invention, states that abutment portion 24 preferably is formed with a self-holding taper matching that of a bore of an implant, i.e., as shown in Fig. 1. Thus, it is submitted, the requirement of 37 CFR 1.83(a) has been met.

The informality in claim 1 noted by the examiner has been corrected in the rewritten claim thereby obviating the objection.

Claims 1, 2 and 4-10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Morgan et al ('500) in view of Ingber et al. ('016). The examiner stated that Morgan et al. ('500) discloses the invention essentially as claimed except for the inner portion of the shaft forming a smooth curved surface with the nose. He further noted that Ingber et al. discloses a dental implant abutment having a shelf, the inner portion 36 forming a smooth curve with the nose 30 (sic) "to enhance application and retention of

the superstructure on the supragingival section” of the abutment. He concluded that it would have been obvious to one skilled in the art to form the inner portion of the shelf of Morgan et al. so as to form a smooth curve with the nose 30 (sic) in view of Ingber et al. in order to enhance application and retention of the supragingival section of the abutment. It is respectfully submitted that this rejection should be withdrawn for the following reasons.

As noted in applicant’s specification, e.g., in paragraph 024, the smooth curved surface of the nose is called for both at base of the nose where it is joined to the central portion of the head and at the free end of the nose (24e). The curved smooth surface facilitates the incremental chemical and mechanical addition of various prosthetic materials and minimizes stress concentration. The curved smooth surface at the free end of the nose is clearly not shown or suggested by the Ingber et al. patent. The free end of the axially elongated cylindrical core portion 34 is flat having sharp edges both on the outside diameter of the free end and the inside diameter of an axial bore 56. These stress locations are completely absent in the claimed structure of the instant invention which calls for a smooth continuous surface of the shelf and nose extending from the central portion. The presence of a sharp edge increases the likelihood of many materials used for the crown fracturing during use by a person in which the implant is placed. As stated above, there is no suggestion in either Ingber et al. or in Morgan et al. to provide an abutment head that has a smooth continuous surface that enables the placement of prosthetic material on the head with minimal stress concentration. In view of the above,

allowance of claim 1, along with claims 2-4 and 6-10 dependent thereon, is respectfully requested. Further, claim 6 calls for the post portion of the abutment to be formed with a self-holding taper for receipt in the bore of an implant having a matching self-holding taper. This is particularly advantageous because this feature has the ability of 360 degrees of universal positioning, unlike the system disclosed in the Ingber et al. patent that requires a non-circular interconnection between the implant and the abutment (non-circular receiving end 24 of the implant and non-circular socket opening 32 of the abutment post). With respect to claim 8, the claimed roughened surface of the head is not shown or suggested in the cited references. With respect to claim 10, neither of the references relied on show nor suggest an abutment having a crown formed of a plurality of prosthetic layers applied and bonded to the head. Thus these claims should be allowable in their own right even without consideration of their parent claim.

Claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Morgan et al. ('500) in view of Ingber et al. as applied to claim 1 and further in view of Groll et al. ('480), the examiner noting that Groll et al. patent discloses and implant abutment having a shelf that conforms to the gingival contour and that it would have been obvious to one skilled in the art to form the shelf of the abutment of the combination Morgan et al. as modified by Ingber et al. such that it conforms to the gingival contour in view of Groll et al. in order that the implant more closely resemble a natural tooth. It is respectfully submitted that this rejection should be withdrawn and that the claim be allowed along with claim 1, its parent claim, for the reasons stated above.

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Amdt. Dated July 20, 2005
Reply to Office action of March 28, 2005

Applicant respectfully requests that a timely Notice of Allowability be issued in this case.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John A. Haug", written in a cursive style.

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Attachments

